

ABSTRACT

A trench photosensor for use in a CMOS imager having an improved charge capacity. The trench photosensor may be either a photogate or photodiode structure. The trench shape of the photosensor provides the photosensitive element with an increased surface area compared to a flat photosensor occupying a comparable area on a substrate. The trench photosensor also exhibits a higher charge capacity, improved dynamic range, and a better signal-to-noise ratio. Also disclosed are processes for forming the trench photosensor.